
Environmental Protection Agency - Region 3
Superfund Program

PROPOSED PLAN TO AMEND:
THE RECORD OF DECISION ISSUED
SEPTEMBER 29, 1992
ABEX CORPORATION SUPERFUND SITE
Portsmouth, Virginia

I. INTRODUCTION

This Proposed Plan identifies the revised preferred alternative (Alternative 8) recommended by the United States Protection Agency (EPA) for cleaning up contaminated soil in Operable Unit One (OU1) at the Abex Corporation Superfund Site (the Site). EPA's proposal to select Alternative 8 is being made in response to new information presented in post-Record of Decision (ROD) public comments and a proposal submitted to EPA by certain potentially responsible parties (PRPs) subsequent to the issuance of the September, 1992 ROD. This Proposed Plan includes a summary of Alternative 4 previously selected in the ROD, describes Alternative 8, the revised remedial alternative preferred by EPA, and explains the reasons for this preference. This document is issued by EPA, the lead agency for response activities at the Site. EPA will select a final remedy for the Site only after the public comment period described below has ended and the information submitted during the comment period has been reviewed and considered. If EPA selects Alternative 8 as the final remedy for OU1, the ROD will be amended to reflect this change.

II. PUBLIC PARTICIPATION

The EPA is publishing this amendment to the Proposed Plan as part of its public participation responsibilities under Section 117(a) of the **Comprehensive Environmental Response, Compensation and Liability Act** of 1980 (CERCLA), as amended. This document summarizes information that can be found in greater detail in the **Focused Feasibility Study** report and other documents contained in the **Administrative Record** file for this Site. EPA encourages the public to review these documents in order to gain a more

comprehensive understanding of the Site and Superfund activities that have been conducted there.

The Administrative Record file, which contains the information upon which the selection of an amended response action will be based, is available at the following locations:

U.S. EPA Docket Room
841 Chestnut Bldg., 9th Fl.
Philadelphia, PA 19107

Portsmouth Library Main Branch
601 Court Street
Portsmouth, Virginia 23704

Virginia Department of Environmental Quality
629 E. Main Street, 4th Fl.
Richmond, VA

EPA encourages comments on the remedial alternative selected in the ROD and the preferred alternative (Alternative 8) described in this Proposed Plan, as well as comments on the information that supports them. Public comments can influence EPA's final choice of a remedial alternative. Interested persons should refer to the ROD for a discussion of Site background, history and enforcement, for a summary of Site risks, and for a summary and evaluation of Alternatives 1 through 7.

EPA has set a public comment period from February 14, 1994, through March 19, 1994, to encourage public participation in the remedial alternative selection process. Although EPA has identified a preferred alternative (Alternative 8), a final decision will not be made until EPA has reviewed comments received during the public comment period. Depending upon the results of this public comment process, the final remedy presented in the ROD may be amended to reflect the selection of the revised preferred Alternative 8.

EPA will hold public availability sessions during the comment period. Public availability sessions are small meetings that gives individuals and small groups a chance to meet with EPA to voice their opinions about issues at the Site. The public availability session is scheduled from 12:00 a.m. through 10:00 p.m. on February 23, 1994 and will be held in the Effingham Street Y.M.C.A., 1013 Effingham Street, Portsmouth, Virginia. EPA will also hold a public meeting to formally discuss the proposed plan and receive comments. The meeting will be held on February 24, 1994 at 7:00 p.m. at the Effingham Street Y.M.C.A., 1013 Effingham Street, Portsmouth, Virginia. Written comments on this Proposed Plan must be postmarked on or before March 19, 1994.

To send written comments or obtain further information, please contact one of the two EPA representatives listed below:

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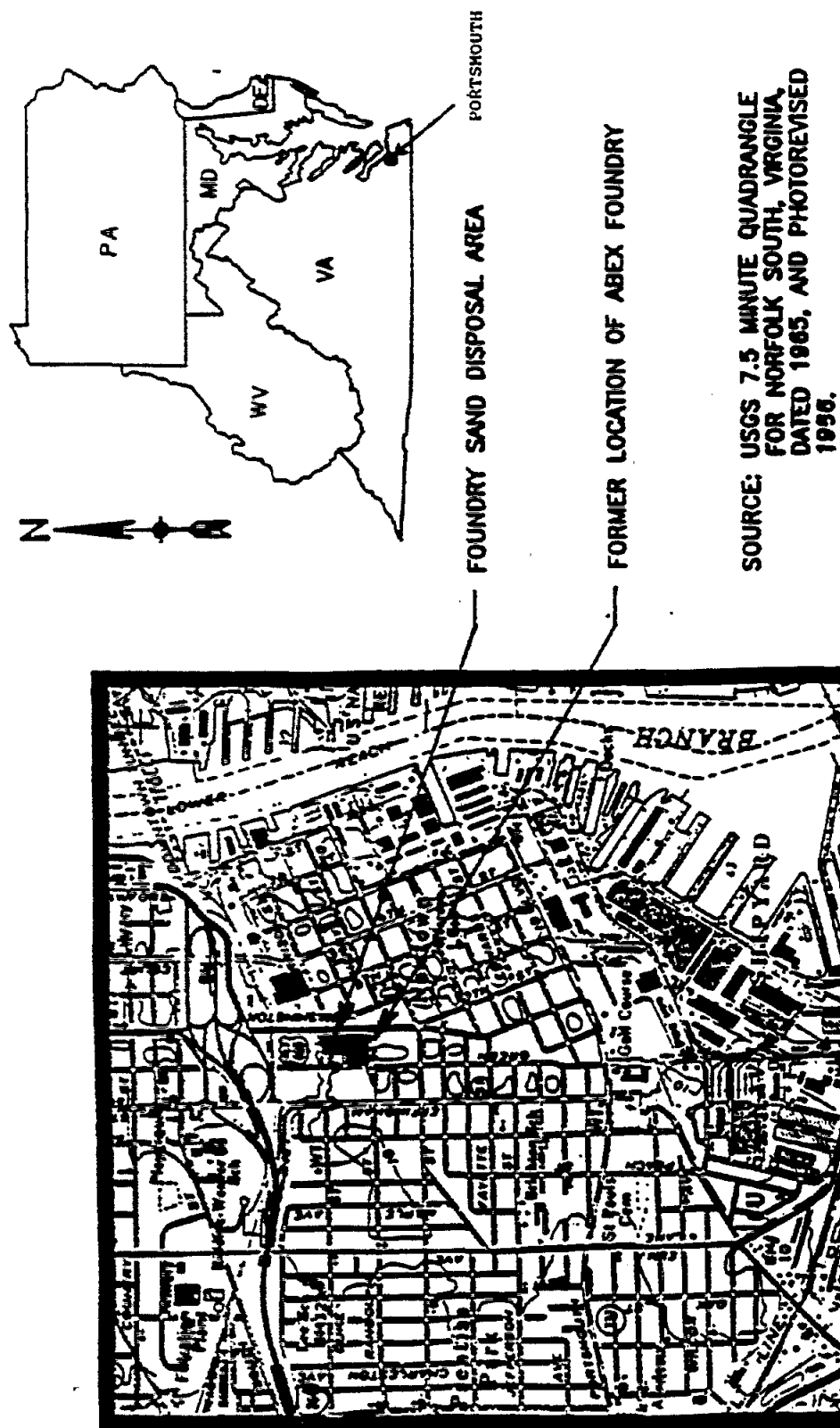
A glossary of terms that may be unfamiliar to the general public is provided with the Proposed Plan. Terms defined in the glossary appear in **bold print** in the text.

III. SITE BACKGROUND

The Site is located in the eastern section of Portsmouth, Virginia, approximately 1.2 miles southwest of the confluence of the southern and eastern branches of the Elizabeth River (see Figure 1). The portion of the Site being addressed under OU1 encompasses a several block area with numerous parcels of land (see Figure 2). The OU1 portion of the Site contains the former Abex brass and bronze foundry, which is comprised of five buildings (hereafter referred to as the Holland Property), and associated former waste sand disposal areas (hereafter referred to as the Abex Lot and the McCready Lot). Other areas within the OU1 portion of the Site which were found to have contamination associated, at least in part, with the former foundry operation include: the Washington Park Housing Development; a drug rehabilitation center and a small shopping center; private residential properties (hereafter referred to as the Effingham residential area); the Effingham Playground; several row homes (hereafter referred to as the Seventh Street Row Homes); and several vacant lots. For more information on the Site location, description, history, enforcement and community relations activities conducted prior to September 29, 1992, refer to Part II, Sections I-III the ROD.

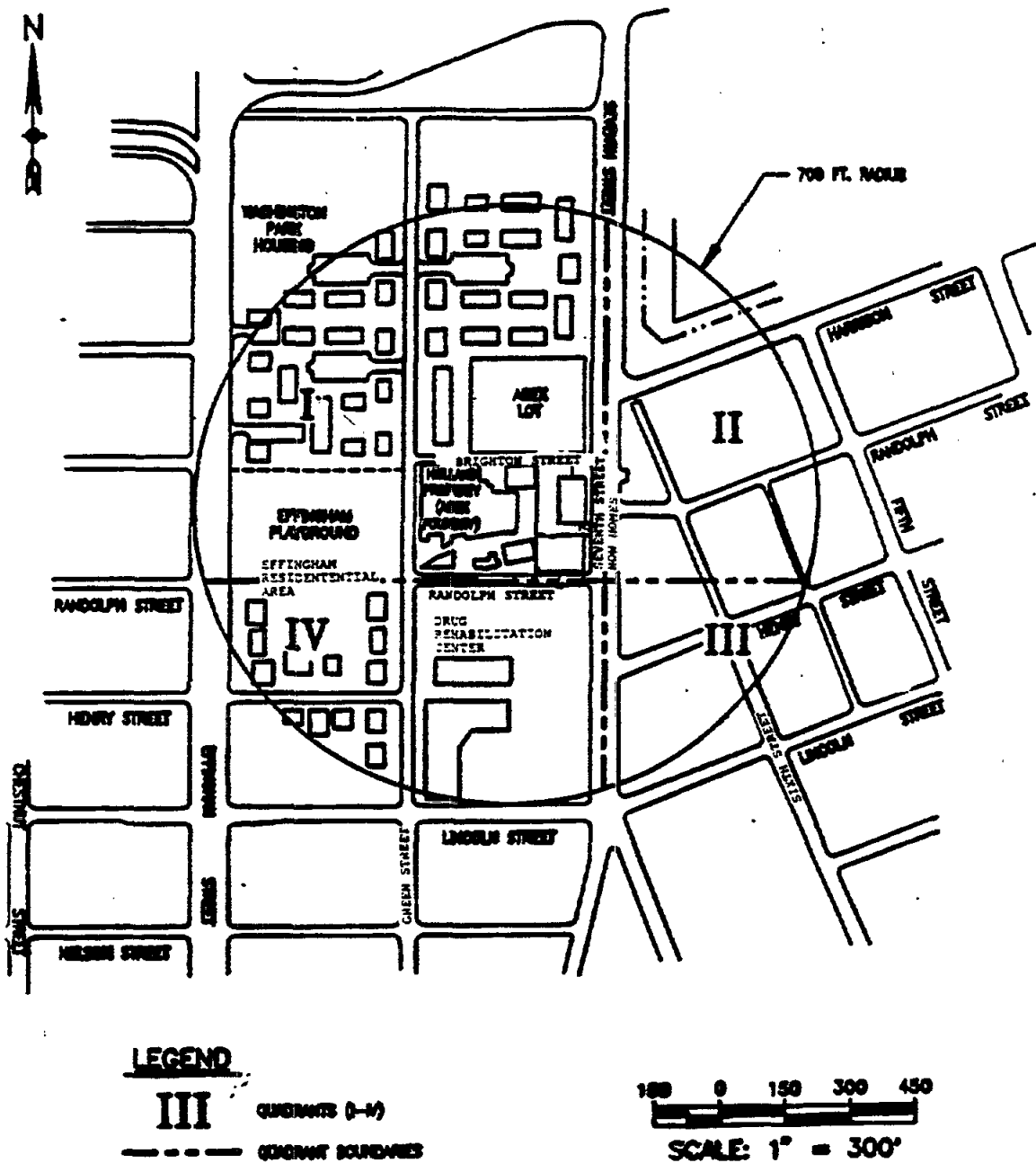
EPA has taken the following response and/or cleanup actions at the Site to date: (1) EPA inspected the Site in June 1984; (2) Abex Corporation signed an EPA Consent Order in August 1986, requiring Abex to remove contaminated soil and pave and fence two Site lots; (3) EPA proposed the Site for inclusion on the National Priorities List (EPA's roster of hazardous waste sites

FIGURE 1 - SITE LOCATION MAP



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FIGURE 2 - MAP OF SITE FEATURES



targeted for potential long-term cleanup under Superfund) in June 1988; (4) Abex agreed to conduct a Remedial Investigation and Feasibility Study (RI/FS) at the Site in October 1989; (5) EPA finalized the Site for inclusion on the National Priorities List (NPL) in August 1990; (6) EPA issued an administrative order requiring Abex to conduct short-term cleanup work involving soil excavation and removal in March 1992; (7) EPA published the original Proposed Plan for long-term OU1 cleanup in April 1992, identifying seven alternatives and proposing the selection of "Alternative 4"; (8) EPA published the ROD announcing its final selection of Alternative 4 as the long-term cleanup plan for OU1 on September 29, 1992; and (9) EPA notified fourteen (14) Potentially Responsible Parties (PRPs) on April 12, 1993, 1993 of their potential liability for cleanup of OU1 and requested that they implement the ROD.

On October 19, 1993, some of the PRPs submitted proposed changes to the ROD based on new information from the City of Portsmouth on proposed land use plans and new controls on future excavation. EPA conducted public availability sessions from November 8, 1993 to November 10, 1993 to solicit input from the affected residents on their positions regarding the PRP's proposed changes to the ROD. The private homeowners responded favorably to the proposal. The public housing residents, while still interested in permanent relocation, were generally supportive of the proposal as well. After thoroughly evaluating the proposal and considering the responses to the proposal received from the affected residents during the November 8, 1993 public availability sessions, EPA is publishing this Proposed Plan with its revised preferred alternative.

IV. DESCRIPTION OF ALTERNATIVES

The remedial alternative selected in the ROD (Alternative 4) and the alternative now preferred by EPA (Alternative 8) are described below.

Elements Common to Alternatives 4 & 8: Both alternatives now being considered include the following elements.

Demolition of Former Foundry Facility Buildings

All buildings associated with the former foundry operation would be demolished in Alternatives 4 and 8. Building debris would be disposed of offsite in a landfill permitted in accordance with the Resource Conservation and Recovery Act (RCRA) and in accordance with RCRA Land Disposal Restrictions. Equipment maintained within these buildings by the current property owner would have to be removed and may require decontamination. Solid residuals generated by any decontamination activities would be handled in the same manner as contaminated soil.

Soil Excavation and Offsite Disposal

Soil excavation and offsite soil disposal is required to various extents under both alternatives. Toxicity Characteristic Leaching Procedure (TCLP) testing would be conducted to determine whether excavated soil is a RCRA characteristic hazardous waste. Soil which is determined to be a RCRA hazardous waste would be treated prior to land disposal. Soil which is not a RCRA hazardous waste may still require treatment prior to disposal in a solid waste facility within Virginia or another state. Conventional earth moving equipment would be used to excavate and load the contaminated soil. Dust suppression measures would be used to ensure that unacceptable releases of air-borne contamination do not occur. All excavated areas would be backfilled with clean fill. Formerly vegetated areas would be graded and reestablished to original condition, to the extent practicable. Where excavation to the depth of the water table is required, excavation would occur during the period when the water table is at the seasonally low elevation, to the extent practicable. Prior to the excavation of contaminated soil on the Abex Lot, the McCready Lot, and the Holland Property, existing asphalt and concrete would be removed and disposed as construction and demolition debris.

Temporary Relocation

Temporary relocation would be provided to residents while excavation is occurring around residential units. The extent of soil to be removed around each residential unit would be determined during the Remedial Design. The specific arrangements for temporary housing would be based on the extent of soil to be removed and the needs of the impacted residents. Efforts would be made to reduce inconvenience to the residents as much as possible.

Soil Treatment By Stabilization and/or Solidification

Where treatment is included, the treatment would be stabilization by mixing excavated soil and waste materials from the Site that exhibit toxicity using the TCLP test with chemicals/reagents. The mixing would be contained in above-ground equipment onsite to create a final product that encapsulates and immobilizes lead and other metals. Specific chemicals to be used in the process would be determined in a treatability study during the Remedial Design phase of the project. Treated material would be tested using TCLP to ensure it no longer exhibits toxic characteristics.

Discharge of Contaminated Water

Discharge of decontamination water and any other water

generated during remedial activities will meet Virginia Pollution Discharge Elimination System (VPDES) requirements developed pursuant to the Federal Clean Water Act, 31 U.S.C. 1251 et seq., and the Virginia State Water Control Law, Code of Virginia 62.1-44.2 et seq.

Air Emissions Monitoring During Remedial Activities

Air will be monitored for both dust and lead levels during the remedial activities to protect the health of onsite workers and the community. Sampling of the interior of homes in the vicinity of excavation will also be performed before, during, and after excavation to assure that the National Emission Standards for Hazardous Air Pollutants (NESHAPS) developed under the Federal Clean Air Act, 40 C.F.R. 50.12 and 50.6, and the Virginia Regulations for the Control and Abatement of Air Pollution (VRCAAP), VR 0401-0101, are not exceeded.

Transportation, Storage, Treatment and Disposal of Soil and Debris in Conformance with State Requirements

In both cases, transportation, storage, treatment and disposal of soil and debris will be in compliance with applicable Virginia Hazardous Waste Management Regulations (VHWMR) or Virginia Solid Waste Management Regulations.

Summary of the Alternatives: A description of additional elements and the estimated cost for each alternative is provided below.

Alternative 4:

Estimated Capital Cost:	\$31,962,923 ¹
Estimated O & M Cost:	0
Present Worth:	\$31,962,923
Time to Construct:	55 weeks

Surface and subsurface soil in OU1 exceeding 500 mg/kg lead in residential areas, including contaminated soil adjacent to home foundations and beneath homes, would be excavated to the depth of the water table. Geotechnical investigations would be performed during the Remedial Design to determine appropriate construction techniques to be used to maintain the structural integrity of the homes during excavation.

¹ In preparing the cost estimate for Alternative 8, EPA determined that the cost for excavation, treatment, and disposal of contaminated soil on the Holland Property had inadvertently been omitted from Alternative 4. Since this cost has been included in Alternative 8, it has also been added to Alternative 4 so that an appropriate comparison can be made.

In non-residential areas, surface soil (0-12" in depth) exceeding 500 mg/kg lead and subsurface soil (>12" in depth) exceeding 1,000 mg/kg lead would be excavated to the depth of the water table.

Alternative 8:

Estimated Capital Cost: \$31,484,170²
Estimated O & M Cost: \$ 23,500
Present Worth: \$31,507,670
Time to Construct: 58 weeks

Surface and subsurface soil in OU1 exceeding 500 mg/kg lead would be excavated to the water table in areas zoned for residential use and in the Abex Lot.

Soil exceeding 500 mg/kg lead in areas zoned for industrial use, except the Abex Lot, would be excavated from the surface to a depth of one foot. Soil below one foot exceeding 1,000 mg/kg lead in industrial areas will be excavated to a depth of two feet. Institution land use controls will be implemented to control any future excavation below two feet and to prevent exposure to contaminated soil.

Soil beneath permanent covers³ such as buildings, parking lots, sidewalks, and streets would not be removed. These covers would be maintained and institutional land use controls would be used to prevent future exposure to contaminated soil.

A CERCLA five-year review will be required under this alternative.

V. COMPARISON OF ALTERNATIVES

These alternatives were evaluated using the following

² For cost estimate purposes, EPA assumed that the areas where the Effingham and Seventh Street homes currently exist will be rezoned by the City of Portsmouth to commercial/light industrial use. The estimated cost to demolish the Effingham and Seventh Street homes and dispose of debris in a RCRA permitted landfill has been included. If these residential areas are not rezoned, residential cleanup requirements would have to be met.

³ The former foundry buildings, the Effingham and Seventh Street homes (if rezoning occurs), and the asphalt covers on the Abex Lot, the McCready Lot and the Holland property would all be removed under this alternative and contaminated soil beneath these existing permanent covers would be removed.

criteria, as required under the National Oil and Hazardous Substances Pollution Contingency Plan (NCP), 40 C.F.R. § 300.430(e)(9)(iii):

THRESHOLD CRITERIA: (Relate to statutory requirements that each alternative must satisfy in order to be eligible for selection.)

1. Overall Protection of Human Health and the Environment

Evaluation of the ability of each alternative to provide adequate protection of human health and the environment in the long and short-term; description of how risks posed through each exposure pathway are eliminated, reduced, or controlled through treatment, engineering controls, or institutional controls.

2. Compliance with Applicable or Relevant and Appropriate Requirements (ARARS)

Evaluation of the ability of each alternative to meet all ARARS of Federal and State environmental laws and/or justification for invoking a waiver; assessment of the ability of each alternative to comply with advisories, criteria, and guidance that EPA has agreed to follow.

PRIMARY BALANCING CRITERIA: (Technical criteria upon which the detailed analysis is primarily based)

3. Long-Term Effectiveness and Permanence

Evaluation of expected residual risk and the ability of each remedy to maintain reliable protection of human health and the environment over time after cleanup goals have been met.

4. Reduction of Toxicity, Mobility or Volume Through Treatment

Evaluation of the statutory preference for selecting remedial actions that employ treatment technologies that permanently and significantly reduce the toxicity, mobility, or volume of hazardous substances.

5. Short-Term Effectiveness

Evaluation of the period of time needed to achieve protection and any adverse impacts on human health and the environment that may be posed during the construction and implementation period, until cleanup

goals are achieved.

6. Implementability

Evaluation of the technical and administrative feasibility of each alternative, including the availability of materials and services.

7. Cost

Section 121 of CERCLA, 42 U.S.C. Section 9621, requires selection of a cost-effective remedy that protects human health and the environment and meets the other requirements of the statute. The Alternatives are compared with respect to present worth cost, which includes all capital costs and the operation and maintenance cost incurred over the life of the project. Capital costs include those expenditures necessary to implement a remedial action, including construction costs. All of the costs indicated below are estimates.

MODIFYING CRITERIA: (Criteria considered throughout the development of the preferred remedial alternative and formally assessed after the public comment period, which may modify the preferred alternative.)

8. State Acceptance

Assessment of technical and administrative issues and concerns that the State may have regarding each alternative.

9. Community Acceptance

Assessment of issues and concerns the public may have regarding each alternative based on a review of public comments received on the Administrative Record and the Proposed Plan.

THRESHOLD CRITERIA

1. Overall Protection of Human Health and the Environment

Alternative 4 would require removal of soil that exceeds health-based cleanup levels in OU1 to the depth of the water table and is considered fully protective of human health and the environment.

Alternative 8 would require removal of soil that exceeds health-based cleanup levels to the depth of the water table in

OU1 residential areas and the Abex Lot and to a depth of two feet in the remaining non-residential areas of OU1. Exposure to contaminated soil remaining below the depth of two feet in non-residential areas or below permanent covers such as buildings, parking lots, sidewalks, and street would be prevented through the use of institutional controls. These controls would include restrictions on deeds and on permits issued for future excavation activities. Alternative 8 is also considered fully protective of human health and the environment.

2. Compliance with ARARs

Both Alternatives 4 and 8 would meet the following respective federal and state ARARs:

- The Resource Conservation and Recovery Act, (40 C.F.R. Parts 261-270); the Virginia Waste Management Act; the Virginia Waste Management Regulations; and the Virginia Solid Waste Management Regulations. These provisions would regulate the transportation, treatment, storage, and disposal of hazardous wastes that occur during the cleanup.
- Clean Water Act; National Pollution Discharge Elimination System requirements, (40 C.F.R. Part 122); the Virginia State Water Control Law; and the Virginia State Water Control Board regulations. These would regulate any discharge of wastewater generated during the cleanup to the waters of the Commonwealth of Virginia.
- National Primary and Secondary Ambient Air Quality Standards for Lead (40 C.F.R. Part 50.12) and for Particulate Matter (40 C.F.R. Part 50.6); and the Virginia Air Pollution Control Board, and the Virginia Department of Air Pollution Control regulations for the Control and Abatement of Air Pollution would regulate air emissions and establish permissible levels of lead and particulate matter that can be released into the environment during the cleanup activities.
- Executive Order 11988, Floodplain Management; the National Flood Insurance Act of 1968; the Flood Disaster Act of 1973; and Procedures for Implementing the Requirements of the Council on Environmental Quality on the National Environmental Policy Act. These provisions would regulate cleanup activities because they take place in a floodplain.
- Coastal Zone Management Act; the Coastal Management Plan for the City of Portsmouth; and the National Oceanic and Atmospheric Administration (NOAA)

Regulations on Federal Consistency With Approved State Coastal Zone Management Programs. These provisions regulate cleanup activities because they take place in a cleanup coastal area.

- Chesapeake Bay Preservation Act would regulate cleanup activities because they take place in the Chesapeake Bay drainage area.
- Virginia Erosion and Sediment Control Law and the Virginia Erosion and Sediment Control Regulations. These provisions would require control measures during earth-moving activities to prevent erosion and transport of sediment in surface water runoff.
- 40 C.F.R. Part 50, Appendix G would establish protocols for air monitoring to be conducted during the cleanup.
- 40 C.F.R. Part 264, Subpart I, and VHWMR Section 10.8 Use and Management of Containers would regulate the use of containers for storing and/or treating hazardous wastes during the cleanup.
- 40 C.F.R. Part 264, Subpart J, and VHWMR Section 10.9, Tanks would regulate the use of tanks for storing and/or treating hazardous wastes during the cleanup.
- 40 C.F.R. Part 262 and 263, 49 C.F.R. Parts 171-179, and VHWMR Part VII, Regulations Applicable to Transporters of Hazardous Waste would regulate transportation of hazardous wastes from the Site in the Commonwealth of Virginia.
- Virginia Solid Waste Management Regulations, Part VIII, would regulate disposal of "Special Wastes" generated during the cleanup in the Commonwealth of Virginia RCRA Subtitle D solid waste landfills.
- Occupational Safety and Health Administration Act (29 C.F.R. Parts 1910, 1926, and 1904) would regulate health and safety requirements for workers during the cleanup.

Alternative 4 and 8 would also both meet the following EPA guidance considered to be relevant to this cleanup:

- Interim Guidance on Establishing Soil Lead Cleanup Levels at Superfund Sites (EPA OSWER Directive 9355.4-02) recommends use of the UBK Model and appropriate assumptions to develop soil cleanup levels for lead.
- Methods for Evaluating the Attainment of Cleanup

Standards, Vol. I (EPA 230/02-89-042) recommends statistical methods to confirm cleanup levels have been achieved.

BALANCING CRITERIA

3. Long-Term Effectiveness and Permanence

Alternative 4 provides minimal residual risk and, therefore, a high degree of long-term effectiveness since surface and subsurface soil exceeding health-based cleanup levels in OU1 are excavated, treated as required onsite, and disposed of offsite in a permitted RCRA landfill.

Under Alternative 8, contaminated soil would remain below the depth of two feet in non-residential areas (except the Abex Lot which would be cleaned up to the water table) and beneath permanent covers such as buildings, parking lots, sidewalks, and streets. Therefore, the residual risk associated with Alternative 8 would be higher than that of Alternative 4 and Alternative 8 would be considered a slightly less permanent remedy than Alternative 4. Institutional controls would be implemented to prevent future exposure to contaminated soil that remains. Overall, Alternative 8 provides for a high degree of long-term effectiveness.

4. Reduction of Toxicity, Mobility, or Volume through Treatment

Lead, the primary contaminant of concern at the Site, is a metallic element that cannot be destroyed to reduce its toxicity. Therefore, remedies addressing lead contamination in soil generally require either removal and/or stabilization by immobilizing the lead within the soil structure, thereby reducing the mobility of the contaminant. Stabilization, however, results in an increase in the volume of material to be addressed and will not reduce the toxicity of the lead.

Under Alternative 4, surface and subsurface soil above the water table that is contaminated with lead above health-based cleanup levels would be excavated, treated, as appropriate, to reduce the mobility of lead in the soil, and removed for off site disposal. For soil that is treated by stabilization, the mobility of the lead will be reduced, but the volume of the lead-contaminated soil will increase due to the addition of stabilizing agents.

Under Alternative 8, soil in OU1 exceeding health-based cleanup levels to the depth of the water table in residential areas and the Abex Lot and to a depth of two feet in remaining non-residential areas would be excavated, treated, as appropriate, to reduce the mobility of the lead in the soil, and

removed for offsite disposal. Relatively small quantities of contaminated soil are expected to remain below two feet in non-residential areas or beneath permanent covers such as buildings, parking lots, sidewalks, and streets. In addition, the mobility of lead in the soil is known to be low. Therefore, Alternative 8 is considered to achieve the same reduction in toxicity through treatment as Alternative 4.

5. Short-Term Effectiveness

The primary short-term effects associated with both alternatives are potential exposure to contaminated dust generated during excavation, and exposure to physical safety hazards that exist around heavy equipment. Air-borne dust containing elevated lead levels could be generated during soil excavation required in Alternatives 4 and 8. The extent of soil excavation is slightly greater under Alternative 4 and, thus, the potential for exposure to contaminated dust could be greater. Additional dust could be generated during soil handling and operation of soil treatment units onsite. However, measures would be taken to control dust during implementation of either of the Alternatives. These measures would be detailed in the Remedial Action Work Plan and the associated Health and Safety Plan which must be prepared and approved by EPA prior to initiation of construction. Measures to be performed would include (1) dust suppression during excavation, handling, and treatment activities, (2) sampling the interior of housing units for contaminated dust before, during, and after remedial activities to ensure dust suppression has been effectively implemented, and (3) air monitoring for both lead and dust before and during remedial activity.

Alternatives 4 and 8 would require temporary relocation of residents during excavation and treatment of contaminated surface and subsurface soil around their residential units. This action would be taken to minimize the physical safety hazards associated with heavy equipment operating in close proximity to residential property. Details on the extent of excavation required for each residential unit and the arrangement for temporary relocation would be discussed with impacted residents during the Remedial Design process.

Both Alternatives require onsite treatment of excavated soils. The Remedial Action Work Plan and Health and Safety Plan would detail measures to be taken to secure the areas where soil is stockpiled and treated to prevent air or water-borne releases of contaminated soil and to prevent access by local children.

6. Implementability

Alternative 4 requires extensive excavation of contaminated

surface and subsurface soil including contaminated soil that may exist adjacent to foundations and/or beneath homes or residential units. Due to the unstable nature of soil or fill material around or under many of the impacted residences and the proximity of the water table to the ground surface (estimated at 3 to 6 feet), strict engineering practices would need to be followed to prevent damage to the homes during excavation. Further geotechnical investigation would be required as part of the Remedial Design to determine appropriate construction techniques to be used to maintain the structural integrity of each home or residential unit requiring excavation. While additional costs would be incurred by implementing the necessary engineering controls, current engineering technology can be employed to safely remove contaminated soil around and beneath impacted residences.

For both Alternatives 4 and 8, implementation of onsite treatment will require careful planning and additional construction activities. In each case, treatability studies will be necessary to determine the appropriate mixture of reagents needed to effectively immobilize the lead in the soil.

Alternative 8 also requires extensive excavation of contaminated surface and subsurface soil, although the depth of excavation is reduced in non-residential areas (except the Abex Lot) and excavation beneath permanent covers such as buildings, parking lots, sidewalks, and streets is not required.³ Under Alternative 8, institutional controls would need to be implemented to prevent future exposure to contaminated soil that remains in place.

Both Alternatives 4 and 8 are considered remedies that can be readily implemented.

7. Cost

The estimated present worth cost of Alternatives 4 and 8, are \$31,962,923 and \$31,507,670, respectively.

MODIFYING CRITERIA

8. State Acceptance

The VDEQ reserves its final concurrence until community comments are evaluated.

9. Community Acceptance

Community acceptance of the preferred alternative (Alternative 8) presented in this Proposed Plan, as well as Alternative 4, will be evaluated following the public comment period, and addressed in the ROD if it is amended.

VI. PREFERRED ALTERNATIVE

Based on the information available at this time, EPA has identified Alternative 8 as its preferred alternative. Alternative 8 meets the evaluation criteria discussed above. Alternative 8 would be protective of human health and the environment, comply with ARARs, provide a permanent solution in the case of soil removed, be effective in the long-term, be implementable, meet short-term effectiveness through use of dust control and other protective measures during the remedial work, and be cost-effective. Alternative 8 addresses the statutory preference for use of treatment as a principal element in the remedy.

GLOSSARY

of Superfund Terms

This glossary defines terms often used by the U.S. Environmental Protection Agency (EPA) staff when describing activities under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA, commonly called Superfund), as amended in 1986. The definitions apply specifically to the Superfund program and may have other meanings when used in different circumstances. Underlined words included in various definitions are defined separately in the glossary.

Administrative Order on Consent (AOC): A legal agreement between EPA and potentially responsible parties (PRPs) whereby PRPs agree to perform or pay the cost of a site cleanup. The agreement describes actions to be taken at a site and may be subject to a public comment period. Unlike a consent decree, an administrative order on consent does not have to be approved by a judge.

Administrative Record: A file which is maintained and contains all information used by the lead agency to make its decision on the selection of a response action under CERCLA. This file is to be available for public review and a copy is to be established at or near the site, usually at one of the information repositories. Also, a duplicate file is held in a central location, such as a Regional or State office.

Air Stripping: A treatment system that removes, or "strips," volatile organic compounds from contaminated ground water or surface water by forcing an airstream through the water and causing the compounds to evaporate.

Aquifer: An underground rock formation composed of materials such as sand, soil, or gravel that can store and supply ground water to wells and springs. Most aquifers used in the United States are within a thousand feet of the earth's surface.

Carcinogen: A substance that causes cancer.

Carbon Adsorption: A treatment system where contaminants are removed from ground water or surface water when the water is forced through tanks containing activated carbon, a specially treated material that attracts the contaminants.

Cleanup: Actions taken to deal with a release or threatened release of hazardous substances that could affect public health and/or the environment. The term "cleanup" is often used broadly to describe various response actions or phases of remedial responses such as the remedial investigation/ feasibility study.

Comment Period: A time period during which the public can review and comment on various documents and EPA actions. For example, a comment period is provided when EPA proposes to add sites to the National Priorities List. Also, a minimum 3-week comment period is held to allow community members to review and comment on a draft RI/FS and proposed plan.

Community Relations (CR): EPA's program to inform and involve the public in the Superfund process and respond to community concerns.

Community Relations Plan (CRP): Formal Plan for EPA community relations activities at a Superfund site.

Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA): A federal law passed in 1980 and modified in 1986 by the Superfund Amendments and Reauthorization Act. The Acts created a special tax that goes into a Trust Fund, commonly known as Superfund, to investigate and clean up abandoned or uncontrolled hazardous waste sites. Under the program, EPA can either:

- o Pay for site cleanup when parties responsible for the contamination cannot be located or are unwilling or unable to perform the work; or
- o Take legal action to force parties responsible for site contamination to clean up the site or pay back the Federal government for the cost of the cleanup.

Consent Decree (CD): A legal document, approved and issued by a judge, that formalizes an agreement reached between EPA and potentially responsible parties (PRPs) where PRPs will perform all or part of a Superfund site cleanup. The consent decree describes actions that PRPs are required to perform and is subject to a public comment period.

Contract Lab Program: Laboratories under contract to EPA which analyze soil, water, and waste samples taken from areas at or near Superfund sites.

Cost-Effective Alternative: The cleanup alternative selected for a site on the National Priorities List based on technical feasibility, permanence, reliability, and cost. The selected alternative does not require EPA to choose the least expensive alternative. It requires that if there are several cleanup alternatives available that deal effectively with the problems at a site, EPA must choose the remedy on the basis of permanence, reliability, and cost.

Cost Recovery: A legal process where potentially responsible parties can be required to pay back the Federal government for money it spends on any cleanup actions.

Emergency: Those releases or threats of releases requiring initiation of on-site activity within hours of the lead agency's determination that a removal action is appropriate.

Enforcement: EPA's efforts, through legal action if necessary, to force potentially responsible parties to perform or pay for a Superfund site cleanup.

Engineering Evaluation/Cost Analysis (EE/CA): An analysis of removal alternatives for a site, similar to a remedial program feasibility study. The EE/CA must be made available for a 30 calendar day public comment period prior to the signing off of the Action Memorandum.

Environmental Response Team (ERT): EPA hazardous waste experts who provide 24-hour technical assistance to EPA Regional Offices and States during all types of emergencies involving releases at hazardous waste sites and spills of hazardous substances.

Explanation of Differences: After adoption of a final remedial action plan, if any remedial action is taken, or any enforcement action under Section 106 is taken, or if any settlement or consent decree under Sections 106 or 122 is entered into, and if such action, settlement, or decree differs in any significant respects from the final plan, the lead agency is required to publish an explanation of the significant differences and the reasons the changes were made. See Guidance on Preparing Superfund Decision Documents: the Proposed Plan and Record of Decision for further information.

Feasibility Study (FS): See Remedial Investigation/Feasibility Study.

Ground Water: Water found beneath the earth's surface that fills pores between materials such as sand, soil, or gravel. In aquifers ground water occurs in sufficient quantities that it can be used for drinking water, irrigation and other purposes.

Hazard Ranking System (HRS): A scoring system used to evaluate potential relative risks to public health and the environment from releases or threatened releases of hazardous substances. EPA and States use the HRS to calculate a site score, from 0 to 100, based on the actual or potential release of hazardous substances from a site through air, surface water, or ground water to affect people. This score is the primary factor used to decide if a hazardous waste site should be placed on the National Priorities List.

Hazardous Substance: Any material that poses a threat to public health and/or the environment. Typical hazardous substances are materials that are toxic, corrosive, ignitable, explosive, or chemically reactive.

Hydrology: The science dealing with the properties, movement, and effects of water on the earth's surface, in the soil and rocks below, and in the atmosphere.

Incineration: Burning of certain types of solid, liquid, or gaseous materials under controlled conditions to destroy hazardous waste.

Information Repository: A file containing current information,

technical reports, and reference documents regarding a Superfund site. The information repository is usually located in a public building that is convenient for local residents -- such as a public school, city hall, or library.

Leachate: A contaminated liquid resulting when water percolates, or trickles, through waste materials and collects components of those wastes. Leaching may occur at landfills and may result in hazardous substances entering soil, surface water, or ground water.

Monitoring Wells: Special wells drilled at specific locations on or off a hazardous waste site where ground water can be sampled at selected depths and studied to determine such things as the direction in which ground water flows and the types and amounts of contaminants present.

National Oil and Hazardous Substances Pollution Contingency Plan (NCP): The Federal regulation that guides the Superfund program.

National Priorities List (NPL): EPA's list of the most serious uncontrolled or abandoned hazardous waste sites identified for possible long-term remedial response using money from the Trust Fund. The list is based primarily on the score a site receives on the Hazard Ranking System (HRS). EPA is required to update the NPL at least once a year.

National Response Center (NRC): The center operated by the U.S. Coast Guard that receives and evaluates reports of oil and hazardous substance releases into the environment and notifies the appropriate agency(ies). The NRC can be contacted 24-hours a day, toll-free at (800) 424-8802.

National Response Team (NRT): Representatives of twelve Federal agencies that coordinate Federal responses to nationally significant pollution incidents and provide advice and technical assistance to the responding agency(ies).

Non-Time-Critical Removals: Those releases or threats of releases not requiring initiation of on-site activity within 6 months after the lead agency's determination, based on the site evaluation, that a removal action is appropriate.

On-Scene Coordinator: The Federal official who coordinates and directs Superfund removal actions.

Operable Unit: An action taken as one part of an overall site cleanup. For example, a carbon absorbtion system could be installed to halt rapidly spreading ground-water contaminants while a more comprehensive and long-term remedial investigation/feasibility study is underway. A number of operable units can be used in the course of a site cleanup.

Operation and Maintenance (O&M): Activities conducted at a site after a response action occurs, to ensure that the cleanup or containment system is functioning properly.

Parts Per Billion (ppb)/Parts per Million (ppm): Units commonly used to express low concentrations of contaminants. For example, 1 ounce of trichloroethylene (TCE) in 1 million ounces of water is 1 ppm; 1 ounce of TCE in 1 billion ounces of water is 1 ppb. If one drop of TCE is mixed in a competition-size swimming pool, the water will contain about 1 ppb of TCE.

Potentially Responsible Party (PRP): An individual(s) or company(ies) (such as owners, operators, transporters, or generators) potentially responsible for, or contributing to, the contamination problems at a Superfund site. Whenever possible, EPA requires PRPs, through administrative and legal actions, to clean up hazardous waste sites they have contaminated.

Preliminary Assessment: The process of collecting and reviewing available information about a known or suspected hazardous waste site or release. EPA or States use this information to determine if the site requires further study. If further study is needed, a site inspection is undertaken.

Proposed Plan: A public participation requirement of SARA in which EPA summarizes for the public the preferred cleanup strategy, the rationale for the preference, reviews the alternatives presented in the detailed analysis of the remedial investigation/feasibility study, and presents any waivers to cleanup standards of §121(d)(4) may be proposed. This may be prepared either as a fact sheet or as a separate document. In either case, it must actively solicit public review and comment on all alternatives under Agency consideration.

Quality Assurance/Quality Control (QA/QC): A system of procedures, checks, audits, and corrective actions used to ensure that field work and laboratory analysis during the investigation and cleanup of Superfund sites meet established standards.

Record of Communication: A register of all verbal communications between EPA and citizens regarding site concerns.

Record of Decision (ROD): A public document that explains which cleanup alternative(s) will be used at National Priorities List sites. The record of decision is based on information and technical analysis generated during the remedial investigation/feasibility study and consideration of public comments and community concerns.

Regional Response Team (RRT): Representatives of Federal, State, and local agencies who may assist in coordination of activities at the request of the On-Scene Coordinator or Remedial Project Manager before and during response actions.

Remedial Action (RA): The actual construction or implementation phase that follows the remedial design of the selected cleanup alternative at a site on the National Priorities List.

Remedial Design (RD): An engineering phase that follows the record of decision when technical drawings and specifications are

developed for the subsequent remedial action at a site on the National Priorities List.

Remedial Investigation/Feasibility Study: Investigative and analytical studies usually performed at the same time in an interactive, iterative process, and together referred to as the "RI/FS." They are intended to:

- o Gather the data necessary to determine the type and extent of contamination at a Superfund site;
- o Establish criteria for cleaning up the site;
- o Identify and screen cleanup alternatives for remedial action: and
- o Analyze in detail the technology and costs of the alternatives.

Remedial Project Manager (RPM): The EPA or State official responsible for overseeing remedial response activities.

Remedial Response: A long-term action that stops or substantially reduces a release or threatened release of hazardous substances that is serious, but does not pose an immediate threat to public health and/or the environment.

Removal Action: An immediate action taken over the short-term to address a release or threatened release of hazardous substances.

Resource Conservation and Recovery Act (RCRA): A Federal law that established a regulatory system to track hazardous substances from the time of generation to disposal. The law requires safe and secure procedures to be used in treating, transporting, storing, and disposing of hazardous substances. RCRA is designed to prevent new, uncontrolled hazardous waste sites.

Response Action: A CERCLA-authorized action at a Superfund site involving either a short-term removal action or a long-term remedial response that may include, but is not limited to, the following activities:

- o Removing hazardous materials from a site to an EPA approved, licensed hazardous waste facility for treatment, containment, or destruction.
- o Containing the waste safely on-site to eliminate further problems.
- o Destroying or treating the waste on-site using incineration or other technologies.
- o Identifying and removing the source of ground water contamination and halting further movement of the contaminants.

Responsiveness Summary: A summary of oral and/or written public comments received by EPA during a comment period on key EPA documents, and EPA's responses to those comments. The responsiveness summary is a key part of the ROD, highlighting community concerns for EPA decision-makers.

Site Inspection (SI): A technical phase that follows a preliminary assessment designed to collect more extensive information on a hazardous waste site. The information is used to score the site with the Hazard Ranking System to determine whether response action is needed.

Superfund: The common name used for the Comprehensive Environmental Response, Compensation, and Liability Act, also referred to as the Trust Fund.

Superfund Amendments and Reauthorization Act (SARA): Modifications to CERCLA enacted on October 17, 1986.

Surface Water: Bodies of water that are above ground, such as rivers, lakes, and streams.

Time Critical Removals: Including emergencies lasting longer than 30 calendar days, those releases requiring initiation of on-site activity within 6 months of the lead agency's determination, based on the site evaluation that a removal action is appropriate.

Treatment, Storage, and Disposal Facility (TSD Facility): Any building, structure, or installation where a hazardous substance has been treated, stored, or disposed. TSD facilities are regulated by EPA and States under the Resource Conservation and Recovery Act.

Trust Fund: A Fund set up under the Comprehensive Environmental Response, Compensation, and Liability Act to help pay for cleanup of hazardous waste sites and to take legal action to force those responsible for the sites to clean them up.

Volatile Organic Compound: An organic (carbon-containing) compound that evaporates (volatilizes) readily at room temperature.

Water Purveyor: A public utility mutual water company, county water district, or municipality that delivers drinking water to customers.